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EXAMINER

MASINICK, MICHAEL D

ART UNIT	PAPER NUMBER
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2125

DATE MAILED: 03/12/2004

15

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/848,999

Applicant(s)

IRVING ET AL.

Examiner

Michael D Masinick

Art Unit

2125

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 February 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 7-13, 20, 22 and 34-39 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 38 and 39 is/are allowed.
- 6) ☒ Claim(s) 7-13, 20, 22, 34-37 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

This action is in response to a reply to the office action received on 2/10/2004.

In response to applicants argument that Alfano in view of Wray does not show “transmitting a third request to a plurality of server chassis cooling fans...” in response to either of the predetermined temperature measurements being higher than a predetermined threshold, examiner maintains the previous rejection. Alfano clearly shows a server card controlling a fan when the temperature reaches a predetermined threshold **for that server card** and also shows the ability to use multiple cards to control multiple fans (Col 8, lines 60-63). Wray clearly shows in column 5, lines 26-40, the ability to turn on all fans should any of the temperature readings be above normal. In the examiners opinion, one of ordinary skill in the art at the time the invention was made would have found it obvious to combine these two references to arrive at the system of the present application. Applicant also argues that neither Alfano nor Wray show multiple temperature standards. However, Alfano shows the use of multiple server cards and fan controllers which each are individually set to their own maximum temperature. This clearly reads on the claims as written.

Applicant argues that Wray shows the use of only one fan. This is correct, however Wray is not relied upon by the examiner to show multiple fans as this feature has already clearly been shown in Alfano. The Wray patent is relied upon to show that any temperature readings from any temperature source are able to trigger the ability to provide “ventilation” to all areas where it might be needed.

Applicant also argues that it is not an inherent trait of all computer systems to have a plurality of fans at least partially disposed within the system chassis. Examiner maintains that this is an inherent piece of any computer system, however, the 103 rejection of the claims has been modified to add Moss et al which more clearly shows multiple fan control where the fans are clearly disposed within a server chassis.

Applicant argues that Wray and Alfano only passively receive temperature readings. In figure 2, blocks 210, 220, and 270 all have temperature comparator circuits. It would be an inherent part of this circuit or assembly language programming to make a request to the temperature sensor to provide the current temperature.

Applicant argues that Wray nor Alfano show "... the first and second temperature sensors being coupled with the first and second server processing cards, respectively." Examiner has clearly shown that Alfano shows a temperature sensor coupled to a server processing card and the ability to have multiple server processing cards (which inherently would each be coupled to their own temperature sensor).

Applicants arguments regarding claims 8 and 9 are not persuasive. All claim elements of claims 8 and 9 are user design choices and would not affect the setup of the system as claimed in independent claim 7. Previous rejections stand as previously written.

Applicants arguments regarding claim 10 and the insinuation that the showing of a PCI card does not mean that communications are done over a PCI bus are not persuasive. Examiner believes that the presence of a PCI card does indeed infer that all communication done by that card is done over a PCI bus. This is an inherent trait to all PCI cards. Alfano does not specifically mention that the server processing cards are PCI cards, but the Peters reference

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shows using PCI cards in relation to a computer cooling system. One of ordinary skill in the art would have made the Alfano cards PCI cards based on the Peters reference, and all communication and power to and from those cards would occur over the PCI bus.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 7-9, 11, 20, 22, 23, and 34-37 are rejected under 35 U.S.C. 102(b) as being unpatentable over U.S. Patent No. 6,037,732 to Alfano et al in view of U.S. Patent No. 4,817,865 to Wray and further in view of U.S. Patent No. 5,546,272 to Moss et al.

3. Referring to claims 7, 22, and 34, Alfano shows a method for controlling a plurality of server chassis cooling fans comprising: transmitting first and second requests to a first and second server processing cards, respectively, to read first and second operating temperatures, respectively, measured at first and second temperature sensors, respectively; the first and second temperature sensors being coupled with the first and second server processing cards, respectively; receiving the first and second operating temperatures at a central processing unit; comparing the first and second operating temperatures with a first and second predetermined maximum operating temperatures, respectively; transmitting a request to a plurality of server chassis cooling fans to increase the speed of the server chassis cooling fans if the operating

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temperature is greater than or equal to the a predetermined maximum operating temperature (Col 1, lines 37-54).

4. Alfano clearly shows the concept of fan server cards controlling fan systems, and in column 8, lines 60-66, clearly shows the ability to use more than one fan card, fan controller, and multiple fans as the user designing the system would see fit.

5. Applicant asserts that Alfano does not specifically show the ability to control a plurality of fans when either the first or second predetermined temperature reaches a predetermined maximum.

6. Wray shows a ventilation system for a computer or electric system housing where the speed of the fans in all “compartments” is increased if the temperature in any of the compartments is over a predetermined threshold (Col 5, lines 26-39).

7. Applicant has asserted that using multiple fans at least partially disposed within the server chassis is not an inherent piece of a computer system.

8. Moss clearly shows wherein the plurality of server chassis cooling fans are disposed at least partially within a server chassis.

9. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the concept of increasing the speed of all fans in response to any single temperate reading being abnormally high because the use of additional ventilation quickens the cooling process and would prevent the noise and annoyance found by workers in the presence of these fans for long periods of time (Wray – Col 1, lines 25-33). It also would have been obvious to one of ordinary skill at the time the invention was made to dispose all fans at least partially

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within the server chassis as shown in Moss because the closer they are to the processor (or other heat source) the more effective they will be.

10. Referring to claim 8, the same rejections apply as it is well known in the art the be able to add as many server processing cards as required and claim 8 brings in no new material other than number of cards and fans. These additional fans and cards are a design choice of the designer of the system and do not change the functionality thereof.

11. Referring to claim 11, 23, and 35, Alfano shows receiving, at the controller, the operating temperature from a sensor chip ("Temperature sensing circuit", column 2, line 38).

12. Referring to claims 20 and 36, see Wray rejection as shown above. Specifically regarding the additions to claim 20 where there are more server cards than server fans, the Alfano patent clearly shows the ability to have multiple server cards and fans, and the number of fans and their relationship to the number of cards does not affect the overall functionality of the system.

13. Referring to claim 9 and 37, Wray shows where at least two of the first, second and third predetermined maximum operating temperatures are equal. Examiner notes that a skilled artisan would have found it an obvious variation to set all of the maximum temperatures to be equal.

14. Claims 10 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,037,732 to Alfano et al in view of Wray and Moss as shown above and further in view of U.S. Patent No. 6,470,289 to Peters.

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15. Alfano in view of Wray does not specifically shows transmitting over a PCI bus or an I2C bus.

16. Referring to claim 10, Peters shows wherein the first request is transmitted over a PCI bus (Col 7, lines 27-30).

17. Referring to claim 12, Peters shows wherein the operating temperature is received at the controller over an I2C bus (Col 10, lines 61-63).

18. It would have been obvious to one of ordinary skill at the time the invention was made to transmit over either of these bus systems because they are well known in the art to be the bus systems used with server processing cards.

19. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over by U.S. Patent No. 6,037,732 to Alfano et al in view of Wray as shown above and further in view of U.S. Patent No. 6,065,081 to Stancil et al.

20. Alfano as shown above does not show where the second request comprises a GPIO signal.

21. The use of General Purpose Input/Output signals is well known in the art for their ability to be quickly analyzed and used. Stancil et al shows the use of GPIO signals over a PCI bus for the purpose of passing password data over the bus.

22. It would have been obvious to one of ordinary skill in the art to use the GPIO signals of Stancil to move the PCI bus signals of Peters in view of Alfano because they are quickly analyzed and would be well suited for closed loop control.

Allowable Subject Matter

23. Claims 38 and 39 are allowed.

24. The following is an examiner's statement of reasons for allowance:

25. 1. While the Alfano and Wray patents shows multiple fan and fan controllers in a configuration similar to the current application, neither this reference taken alone or in combination with the prior art of record disclose a first, second and third of at least ten server processing cards. It is this first, second, and third of at least ten cards, in combination with the remaining elements and features of the invention, that the applicant's invention defines over the prior art of record.

26. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance".

Conclusion

27. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period

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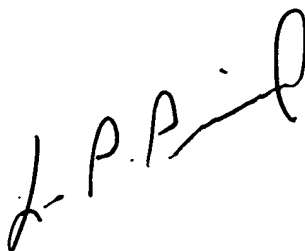
will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael D Masinick whose telephone number is (703) 305-7738. The examiner can normally be reached on Mon-Fri, 7:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo Picard can be reached on (703) 308-0538. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 746-7239 for regular communications and (703) 746-7239 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

mdm
March 3, 2004

A handwritten signature in black ink, appearing to read 'L. Picard', written in a cursive style.

LEO PICARD
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100